C/C++ Programming - BMEEOFTMV32

I. Subject Specification

1. Basic Data

1.1 Title

C/C++ Programming

1.2 Code

BMEEOFTMV32

1.3 Type

Module with associated contact hours

1.4 Contact hours

Type	Hours/week / (days)
Lab	2

1.5 Evaluation

Midterm grade

1.6 Credits

2

1.7 Coordinator

name	Dr. Barsi Árpád
academic rank	Professor
email	barsi.arpad@emk.bme.hu

1.8 Department

Department of Photogrammetry and Geoinformatics

1.9 Website

https://epito.bme.hu/BMEEOFTMV32
https://fiek2.mywire.org/course/view.php?id=3377

1.10 Language of instruction

hungarian and english

1.11 Curriculum requirements

Optional in the Civil Engineering (BSc) programme

1.12 Prerequisites

1.13 Effective date

5 February 2020

2. Objectives and learning outcomes

2.1 Objectives

The aim of the course is to show the students the basics of C and C++ programming languages. This is a practice based course, where the students study the main ideas of the programming by writing codes. They will be familiar with the development tools which can help them to build whole projects. During the semester we use only free development kits.

2.2 Learning outcomes

Upon successful completion of this subject, the student:

A. Knowledge

1. has basic knowledge about the C and C++ tools and how to create and use a console based application,
2. has basic knowledge about the algorithms,
3. has an overview the most important C/C++ literature.

B. Skills

1. can create algorithms and develop a basic software,
2. can manage the development tools (code writing, debugging),
3. can use the console for IO operations,
4. can understand the 3rd party source codes.

C. Attitudes

1. tries to write simple and readable codes,
2. tries to create errorless and understandable softwares.

D. Autonomy and Responsibility

1. can solve the tasks independently.

2.3 Methods

The student study the basic programming tools by writing sample codes. During the practice they develop a

software independently. They will know the complex data structures and can solve difficult tasks.

2.4 Course outline

Week	Topics of lectures and/or exercise classes
1.	Introduction
2.	I/O, control structures
3.	Vector operations, calling basic functions
4.	Functions I.
5.	String operations, modulus operator
6.	Overview
7.	Test I.
8.	Functions II. (default parameters, function overloading, reference)
9.	OOP principles, classes and objects
10.	Constructor, destructors
11.	File management
12.	Inheritance
13.	Overview
14.	Test II.

The above programme is tentative and subject to changes due to calendar variations and other reasons specific to the actual semester. Consult the effective detailed course schedule of the course on the subject website.

2.5 Study materials

- https://edu.epito.bme.hu/course/view.php?id=3371
- Bjarne Stroustrup: The C++ Programming Language
- https://www.youtube.com/watch?v=18c3MTX0PK0&list=PLlrATfBNZ98dudnM48yfGUldqGD0S4FFb

2.6 Other information

2.7 Consultation

The instructors are available for consultation during their office hours, as advertised on the department website. Special appointments can be requested via e-mail: neuberger.hajnalka@epito.bme.hu

This Subject Datasheet is valid for:

2023/2024 semester I

II. Subject requirements

Assessment and evaluation of the learning outcomes

3.1 General rules

3.2 Assessment methods

Evaluation form	Abbreviation	Assessed learning outcomes
Test 1	T1	A.1-A.3; B.1-B.4; C.1-C.2; D.1
Test 2	T2	A.1-A.3; B.1-B.4; C.1-C.2; D.1

The dates of deadlines of assignments/homework can be found in the detailed course schedule on the subject's website.

3.3 Evaluation system

Abbreviation	Score
T1	50%
T2	50%
Sum	**100%**

3.4 Requirements and validity of signature

3.5 Grading system

Grade	Points (P)
excellent (5)	85<=P
good (4)	75<=P<85
satisfactory (3)	65<=P<75
passed (2)	50<=P<65
failed (1)	P<50%

3.6 Retake and repeat

There is only one retake test during the 15th week.

3.7 Estimated workload

Activity	Hours/semester
Labs	14×2=28
Practice for the tests	10+10=20
Practice at home	12
Sum	**60**

3.8 Effective date

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